**Unit: Manual Motor Controls Hands On: 3**

**Title: Forward/Reverse using a Selector Switch of a 1P Motor CLO# 1,2**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Station \_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Evaluate student’s motor control circuit design skills.
2. Appraise student’s wiring skills associated with a motor control circuit.
3. Student shall prove their understanding of forward/reverse motor control circuit.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this hands-on test. Grading shall be based on the Manual Motor Controls rubric.

**Instructions**

Design a forward/reverse motor control circuit using two momentary pushbuttons and a three-position selector switch. One pushbutton shall be a traditional “start” button. When the start button is pressed, the motor shall start and continue to run even if the “start” button is no longer pressed. If the “stop” button is pressed, the motor shall stop. The selector switch shall determine if the motor is to rotate “forward” (CCW) or “reverse” (CW). If the motor is running and the selector switch is changed, the motor shall stop running. If the selector switch is in the “off” position, the motor cannot be started. If a direction is selected, the operator shall have to press the “start” button to engage the motor in the newly selected direction. While the motor is running, the green light shall come on and the red light shall be off. When the motor is not running, the green light shall be off and the red light shall be on. If the reverse option is selected, the blue light shall be illuminated when the motor is running. Use the space on the opposite side of this page to design your circuit. You may ask the instructor to look over your schematic, but any instructor help shall be a deduction in points. You may wire the circuit without the instructor reviewing your drawing, but you may **not** energize the circuit once wired. Double check your drawing and wiring. Ensure to label all wires with the appropriate wire numbers. Once you are ready for a grade, have your instructor review the drawing and wiring before energizing and testing the circuit.

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| --- | --- | --- | --- |
|  |  | Black | Red |
| Forward | Counter Clockwise (CCW) | A | 5 |
| Reverse | Clockwise (CW) | 5 | A |

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